

WHAT IS CLAIMED IS:

1. A method for attaching a pellicle to a photomask, comprising:

providing a pellicle including a thin film coupled to a first surface of a frame, the frame including a non-distorting mechanism coupled to a second surface of the frame and located opposite the thin film; and

coupling the pellicle to a photomask using the non-distorting mechanism, the non-distorting mechanism operable to reduce stress exerted on the photomask by the pellicle.

2. The method of Claim 1, wherein coupling the pellicle to the photomask using the non-distorting mechanism comprises:

mounting the frame on the photomask with an attachment mechanism; and

creating a seal between the frame and the photomask with a sealing mechanism.

3. The method of Claim 2, wherein the sealing mechanism comprises a gasket.

4. The method of Claim 3, wherein the gasket comprises a fluoropolymer.

5. The method of Claim 3, wherein the gasket comprises a polyphosphazene based material.

6. The method of Claim 3, wherein the gasket comprises a silicon based gel material.

7. The method of Claim 2, wherein mounting the frame on the photomask with an attachment mechanism comprises:

5 attaching a magnet to the second end of the frame;
 forming a magnetic section on the photomask; and
 coupling the magnet to the magnetic section.

8. The method of Claim 2, wherein mounting the frame on the photomask with an attachment mechanism comprises:

10 forming a slot in the second end of the frame;
 attaching a pin to the photomask, the pin including a proximal end and a distal end;
15 placing the distal end of the pin in the slot; and
 securing the pin in the slot by using a fastener associated with the frame.

9. The method of Claim 2, wherein mounting the frame on the photomask with an attachment mechanism comprises:

20 forming an attachment point on an outer perimeter of the frame;
 attaching a clip to the photomask, the clip including
25 a proximal end and a distal end; and
 placing the distal end of the clip in the attachment point to secure the pellicle to the photomask.

10. The method of Claim 2, wherein mounting the frame on the photomask with an attachment mechanism comprises:

5 attaching a vacuum cup to the second end of the frame;

placing the vacuum cup on the photomask; and
applying a force on the pellicle to secure the pellicle to the photomask.

10 11. The method of Claim 1, further comprising the non-distorting mechanism operable to reduce degradation of a flatness associated with the photomask.

12. A pellicle, comprising:

a frame including a first surface located opposite of
a second surface;

5 a transparent film attached to the first surface of
the frame; and

a non-distorting mechanism coupled to the second
surface of the frame, the non-distorting mechanism
operable to couple the pellicle to a photomask and reduce
stress exerted by the pellicle on the photomask.

10 13. The pellicle of Claim 12, wherein the non-
distorting mechanism comprises:

an attachment mechanism operable to mount the frame
on the photomask; and

15 a sealing mechanism operable to create a seal between
the pellicle and the photomask after the frame has been
mounted on the photomask.

20 14. The pellicle of Claim 13, wherein the sealing
mechanism comprises a gasket.

15. The pellicle of Claim 14, wherein the gasket
comprises a fluoropolymer.

25 16. The pellicle of Claim 14, wherein the gasket
comprises a polyphosphazene based material.

17. The pellicle of Claim 14, wherein the gasket
comprises a silicon based gel material.

18. The pellicle of Claim 13, wherein the attachment mechanism comprises a magnet operable to couple to a magnetic section formed on the photomask.

5 19. The pellicle of Claim 13, wherein the attachment mechanism comprises:

 a slot formed in the frame;

 a pin including a proximal end and a distal end, the proximal end operable to couple to the photomask; and

10 a fastener associated with the frame, the fastener operable to secure the distal end of the pin in the slot.

20. The pellicle of Claim 13, wherein the attachment mechanism comprises:

15 an attachment point formed along an outer perimeter of the frame; and

 a clip including a proximal end and a distal end, the proximal end operable to couple to the photomask and the distal end operable to engage the attachment point on the
20 frame.

21. The pellicle of Claim 13, wherein the attachment mechanism comprises a vacuum cup operable to couple to the photomask.

22. A photomask assembly, comprising:

a photomask including a patterned layer formed on a portion of a substrate; and

5 a pellicle coupled to the substrate by a non-distorting mechanism, the pellicle including a thin film attached to a frame opposite the non-distorting mechanism, the non-distorting mechanism operable to reduce stress exerted on the photomask by the pellicle.

10 23. The photomask assembly of Claim 22, wherein the non-distorting mechanism comprises:

an attachment mechanism operable to mount the frame on the photomask; and

15 a sealing mechanism operable to provide a seal between the pellicle and the photomask.

24. The photomask assembly of Claim 23, wherein the sealing mechanism comprises a gasket.

20 25. The photomask assembly of Claim 24, wherein the gasket comprises a fluoropolymer.

26. The photomask assembly of Claim 24, wherein the gasket comprises a polyphosphazene based material.

25 27. The photomask assembly of Claim 24, wherein the gasket comprises a silicon based gel material.

30 28. The photomask assembly of Claim 23, wherein the attachment mechanism comprises a magnet operable to couple to a magnetic section formed on the photomask.

29. The photomask assembly of Claim 23, wherein the attachment mechanism comprises:

a slot formed in the frame;

5 a pin including a proximal end and a distal end, the proximal end operable to couple to the photomask; and

a fastener associated with the frame, the fastener operable to secure the distal end of the pin in the slot.

10 30. The photomask assembly of Claim 23, wherein the attachment mechanism comprises:

an attachment point formed along an outer perimeter of the frame; and

15 a clip including a proximal end and a distal end, the proximal end operable to couple to the photomask and the distal end operable to engage the attachment point on the frame.

20 31. The photomask assembly of Claim 13, wherein the attachment mechanism comprises a vacuum cup operable to couple to the photomask.

25 32. The photomask assembly of Claim 22, wherein the patterned layer comprises chrome with a reduced amount of intrinsic stress.